

AMENDMENTS

In the Claims

Please amend claims 1-2, 4, 6, 8, 10-11, 13-14, 18, 27, 39, 42, 55, 73, and 81 as shown herein.

Please cancel claim 19.

Claims 1-18 and 20-86 are pending and are listed following:

1. (currently amended) A network system, comprising:

a first computer configured to maintain an object having ~~an~~ a multi-valued attribute comprised of that includes a value that links to a plurality of individual linked values, each the linked values having associated therewith respective conflict-resolution data, and wherein the first computer is adapted to update the conflict-resolution data associated with at least one linked value in response to at least a first modification made the linked value;

at least a second computer configured to replicate the object to generate a replica object, and to maintain a replica of the value as a link to a plurality of replica linked values associated with the replica object, the replica linked values having associated therewith respective further conflict-resolution data, and wherein the second computer is adapted to update the further conflict-resolution data in response to at least a further modification made to the replica linked value on the second computer; and

1 at least one of the first computer and the second computer being further
2 configured to resolve a replication conflict between a the linked value of the
3 attribute in the object and the replica linked value of the attribute in the replica
4 object, the replication conflict arising from the first modification made to the
5 linked value on the first computer and from the further modification made to the
6 replica linked value on the second computer, and the replication conflict being
7 resolved, ~~with~~ at least in part, based upon the conflict-resolution data and the
8 further conflict-resolution data associated with the linked values.

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10 **2. (currently amended)** A network system as recited in claim 1,
11 wherein at least one of the first computer and the second computer is further
12 configured to compare the conflict-resolution data associated with the linked value
13 of the attribute in the object and the further conflict-resolution data associated with
14 the linked value of the attribute in the replica object to resolve the replication
15 conflict.

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17 **3. (previously presented)** A network system as recited in claim 1,
18 wherein the conflict-resolution data comprises a version indicator that corresponds
19 to a version of an individual linked value.
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1 **4. (currently amended)** A network system as recited in claim 1,
2 wherein the conflict-resolution data and the further conflict-resolution data
3 comprise ~~comprises~~ at least a respective version number that corresponds to a
4 version of an individual linked value, and wherein at least one of the first
5 computer and the second computer is further configured to:

6 compare the version number associated with the linked value of the
7 attribute in the object and the version number associated with the linked value of
8 the attribute in the replica object to resolve the replication conflict; and

9 update the linked value of the attribute in the replica object if the linked
10 value has a lower version number than the linked value of the attribute in the
11 object.

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13 **5. (previously presented)** A network system as recited in claim 1,
14 wherein the conflict-resolution data comprises an update indicator that
15 corresponds to when an individual linked value is updated.

1 **6. (currently amended)** A network system as recited in claim 1,
2 wherein the conflict-resolution data and the further conflict-resolution data
3 comprise at least respective ~~comprises an~~ update timestamps that correspond
4 ~~corresponds to~~ when an individual linked value is updated, and wherein at least
5 one of the first computer and the second computer is further configured to:

6 compare the update timestamp associated with the linked value of the
7 attribute in the object and the update timestamp associated with the linked value of
8 the attribute in the replica object to resolve the replication conflict; and

9 update the linked value of the attribute in the replica object if the linked
10 value has an earlier update timestamp than the linked value of the attribute in the
11 object.

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13 **7. (previously presented)** A network system as recited in claim 1,
14 wherein the conflict-resolution data comprises a creation indicator that
15 corresponds to when an individual linked value is created.

1 **8. (currently amended)** A network system as recited in claim 1,
2 wherein the conflict-resolution data and the further conflict-resolution data
3 comprise at least respective ~~comprises~~—a creation timestamps that
4 ~~corresponds~~correspond to when an individual linked value is created, and wherein
5 at least one of the first computer and the second computer is further configured to:

6 compare the creation timestamp associated with the linked value of the
7 attribute in the object and the creation timestamp associated with the linked value
8 of the attribute in the replica object to resolve the replication conflict; and

9 update the linked value of the attribute in the replica object if the linked
10 value has an earlier creation timestamp than the linked value of the attribute in the
11 object.

12
13 **9. (previously presented)** A network system as recited in claim 1,
14 wherein the conflict-resolution data comprises a version indicator that corresponds
15 to a version of an individual linked value and an update indicator that corresponds
16 to when the individual linked value is updated.

1 **10. (currently amended)** A network system as recited in claim 1,
2 wherein the conflict-resolution data and the further conflict-resolution data
3 comprise at least respective ~~comprises~~ a version numbers that ~~corresponds~~
4 correspond to a version of an individual linked value, and comprise at least
5 respective ~~an~~ update timestamps that ~~corresponds~~ correspond to when the
6 individual linked value is updated, and wherein at least one of the first computer
7 and the second computer is further configured to:

8 compare the conflict-resolution data associated with the linked value of the
9 attribute in the object and the further conflict-resolution data associated with the
10 linked value of the attribute in the replica object; and

11 resolve the replication conflict in favor of the linked value that first has a
12 higher version number, and second has a later update timestamp.
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1 **11. (currently amended)** A network system as recited in claim 1,
2 wherein the conflict-resolution data and the further conflict-resolution data
3 comprise at least respective ~~comprises a~~ version numbers that ~~corresponds~~
4 correspond to a version of an individual linked value, and comprise at least
5 respective ~~an~~ update timestamps that correspond ~~corresponds~~ to when the
6 individual linked value is updated, and wherein at least one of the first computer
7 and the second computer is further configured to:

8 compare the conflict-resolution data associated with the linked value of the
9 attribute in the object and the further conflict-resolution data associated with the
10 linked value of the attribute in the replica object to resolve the replication conflict;

11 update the linked value of the attribute in the replica object if the linked
12 value has a lower version number than the linked value of the attribute in the
13 object; and

14 if the version number associated with the linked value of the attribute in the
15 replica object is equivalent to the version number associated with the linked value
16 of the attribute in the object, update the linked value of the attribute in the replica
17 object if the linked value has an earlier update timestamp than the linked value of
18 the attribute in the object.

1 **12. (previously presented)** A network system as recited in claim 1,
2 wherein the conflict-resolution data comprises a creation indicator that
3 corresponds to when an individual linked value is created, a version indicator that
4 corresponds to a version of the individual linked value, and an update indicator
5 that corresponds to when the individual linked value is updated.

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7 **13. (currently amended)** A network system as recited in claim 1,
8 wherein the conflict-resolution data and the further conflict-resolution data
9 comprise at least respective ~~comprises a~~ creation timestamps that ~~corresponds~~
10 correspond to when an individual linked value is created, comprise at least
11 respective ~~a~~ version numbers that correspond ~~corresponds~~ to a version of the
12 individual linked value, and comprise at least respective ~~an~~ update timestamps that
13 correspond ~~corresponds~~ to when the individual linked value is updated, and
14 wherein at least one of the first computer and the second computer is further
15 configured to:

16 compare the conflict-resolution data associated with the linked value of the
17 attribute in the object and the further conflict-resolution data associated with the
18 linked value of the attribute in the replica object; and

19 resolve the replication conflict in favor of the linked value that first has a
20 later creation timestamp, second has a higher version number, and third has a later
21 update timestamp.

1 **14. (currently amended)** A network system as recited in claim 1,
2 wherein the conflict-resolution data and the further conflict-resolution data
3 comprise at least respective ~~comprises~~ a creation timestamps that correspond
4 ~~corresponds~~ to when an individual linked value is created, comprise at least
5 respective a-version numbers that correspond ~~corresponds~~ to a version of the
6 individual linked value, and comprise at least respective an-update timestamps that
7 correspond ~~corresponds~~ to when the individual linked value is updated, and
8 wherein at least one of the first computer and the second computer is further
9 configured to:

10 compare the conflict-resolution data associated with the linked value of the
11 attribute in the object and the further conflict-resolution data associated with the
12 linked value of the attribute in the replica object to resolve the replication conflict;

13 update the linked value of the attribute in the replica object if the linked
14 value has an earlier creation timestamp than the linked value of the attribute in the
15 object;

16 if the creation timestamp associated with the linked value of the attribute in
17 the replica object is equivalent to the creation timestamp associated with the linked
18 value of the attribute in the object, update the linked value of the attribute in the
19 replica object if the linked value has a lower version number than the linked value
20 of the attribute in the object; and

21 if the version number associated with the linked value of the attribute in the
22 replica object is equivalent to the version number associated with the linked value
23 of the attribute in the object, update the linked value of the attribute in the replica
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1 object if the linked value has an earlier update timestamp than the linked value of
2 the attribute in the object.

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4 **15. (previously presented)** A network system as recited in claim 1,
5 wherein the individual linked values have an associated deletion indicator that is a
6 null identifier to indicate the existence of a linked value of the attribute in the
7 object.

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9 **16. (previously presented)** A network system as recited in claim 1,
10 wherein the individual linked values have an associated deletion indicator that
11 corresponds to when an individual linked value is marked for deletion from the
12 attribute in the object.

13
14 **17. (previously presented)** A network system as recited in claim 1,
15 wherein the individual linked values have an associated deletion timestamp that
16 corresponds to when an individual linked value is marked for deletion from the
17 attribute in the object, and wherein the second computer is further configured to
18 delete a linked value from the attribute in the object if the linked value has a
19 deletion timestamp that indicates the linked value is marked for deletion.

1 **18. (currently amended)** A state-based replication system,
2 comprising:

3 an object having a multi-valued attribute that includes a value which is a
4 reference link to multiple referenced linked values, ~~each~~ at least one of the
5 referenced linked values⁸ having associated therewith indicators to indicate a
6 change to a ~~corresponding~~ the linked value of the attribute;

7 at least a further object replicating the object, the further object having a
8 multi-valued attribute that includes a replica value which is a reference link to
9 multiple referenced linked values, at least one of the referenced linked values
10 having associated therewith indicators to indicate a change to the referenced
11 linked value of the attribute; and

12 a computing device configured to replicate the object and to identify a
13 change to a linked value of the attribute by a change to one or more of the
14 indicators corresponding to the referenced linked values of the object or the further
15 object.

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17 **19. (cancel)** A state-based replication system as recited in claim 18,
18 wherein the computing device is further configured to:

19 maintain a replica object, the replica object being replicated from the
20 object; and

21 compare the object with the replica object to identify, with the indicators, a
22 linked value replication conflict.
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1 **20. (previously presented)** A state-based replication system as
2 recited in claim 18, wherein the indicators comprise a version indicator that
3 corresponds to a version of a linked value.

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5 **21. (previously presented)** A state-based replication system as
6 recited in claim 18, wherein the indicators comprise an update indicator that
7 corresponds to when a linked value is changed.

8 **22. (previously presented)** A state-based replication system as
9 recited in claim 18, wherein the indicators comprise a creation indicator that
10 corresponds to when a linked value is created.

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12 **23. (previously presented)** A state-based replication system as
13 recited in claim 18, wherein the indicators comprise a version number that
14 corresponds to a version of a linked value and an update timestamp that
15 corresponds to when the linked value is changed.

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17 **24. (previously presented)** A state-based replication system as
18 recited in claim 18, wherein the indicators comprise a creation timestamp that
19 corresponds to when a linked value is created, a version number that corresponds
20 to a version of the linked value, and an update timestamp that corresponds to when
21 the linked value is changed.

1 **25. (previously presented)** A state-based replication system as
2 recited in claim 18, wherein the indicators comprise a deletion indicator that has a
3 null identifier to indicate the existence of a linked value of the attribute.

4
5 **26. (previously presented)** A state-based replication system as
6 recited in claim 18, wherein the indicators comprise a deletion timestamp that
7 corresponds to when a linked value is marked for deletion from the attribute.

8
9 **27. (currently amended)** A state-based replication system,
10 comprising:

11 a first computer configured to maintain a first data structure, the first data
12 structure having a multi-valued attribute that includes a reference link to multiple
13 referenced linked values, ~~each~~ the referenced linked values having respective
14 conflict-resolution information to indicate a change to a corresponding referenced
15 linked value of the attribute;

16 a second computer configured to maintain a second data structure having
17 the multi-valued attribute that includes the reference link to the multiple
18 referenced linked values; and

19 the first and second data structures configured to be replicated and to have a
20 replication conflict between a referenced linked value of the attribute in the first
21 data structure and a referenced linked value of the attribute in the second data
22 structure resolved with the conflict-resolution information associated with the
23 referenced linked values.

1 **28. (previously presented)** A state-based replication system as
2 recited in claim 27, wherein the first and second computers are further configured
3 to:

4 compare the conflict-resolution information associated with the linked
5 value of the attribute in the first data structure with the conflict-resolution
6 information associated with the linked value of the attribute in the second data
7 structure;

8 identify a replication conflict; and

9 resolve the replication conflict with the conflict-resolution information
10 associated with the linked values.

11
12 **29. (original)** A state-based replication system as recited in claim 27,
13 wherein the conflict-resolution information comprises a version indicator that
14 corresponds to a version of an individual linked value.

1 **30. (original)** A state-based replication system as recited in claim 27,
2 wherein:

3 the conflict-resolution information comprises a version number that
4 corresponds to a version of an individual linked value;

5 the first and second computers are further configured to compare the
6 version number associated with the linked value of the attribute in the first data
7 structure with the version number associated with the linked value of the attribute
8 in the second data structure;

9 the first computer is further configured to update the linked value of the
10 attribute in the first data structure if the linked value has a lower version number
11 than the linked value of the attribute in the second data structure; and

12 the second computer is further configured to update the linked value of the
13 attribute in the second data structure if the linked value has a lower version
14 number than the linked value of the attribute in the first data structure.

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16 **31. (original)** A state-based replication system as recited in claim 27,
17 wherein the conflict-resolution information comprises an update indicator that
18 corresponds to when an individual linked value is changed.

1 **32. (original)** A state-based replication system as recited in claim 27,
2 wherein:

3 the conflict-resolution information comprises an update timestamp that
4 corresponds to when an individual linked value is changed;

5 the first and second computers are further configured to compare the update
6 timestamp associated with the linked value of the attribute in the first data
7 structure with the update timestamp associated with the linked value of the
8 attribute in the second data structure;

9 the first computer is further configured to update the linked value of the
10 attribute in the first data structure if the linked value has an earlier update
11 timestamp than the linked value of the attribute in the second data structure; and

12 the second computer is further configured to update the linked value of the
13 attribute in the second data structure if the linked value has an earlier update
14 timestamp than the linked value of the attribute in the first data structure.

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16 **33. (original)** A state-based replication system as recited in claim 27,
17 wherein the conflict-resolution information comprises a creation indicator that
18 corresponds to when an individual linked value is created.

1 **34. (original)** A state-based replication system as recited in claim 27,
2 wherein:

3 the conflict-resolution information comprises a creation timestamp that
4 corresponds to when an individual linked value is created;

5 the first and second computers are further configured to compare the
6 creation timestamp associated with the linked value of the attribute in the first data
7 structure with the creation timestamp associated with the linked value of the
8 attribute in the second data structure;

9 the first computer is further configured to update the linked value of the
10 attribute in the first data structure if the linked value has an earlier creation
11 timestamp than the linked value of the attribute in the second data structure; and

12 the second computer is further configured to update the linked value of the
13 attribute in the second data structure if the linked value has an earlier creation
14 timestamp than the linked value of the attribute in the first data structure.

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16 **35. (original)** A state-based replication system as recited in claim 27,
17 wherein the conflict-resolution information comprises a version indicator that
18 corresponds to a version of an individual linked value and an update indicator that
19 corresponds to when the individual linked value is changed.
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1 **36. (original)** A state-based replication system as recited in claim 27,
2 wherein the conflict-resolution information comprises a creation indicator that
3 corresponds to when an individual linked value is created, a version indicator that
4 corresponds to a version of the individual linked value, and an update indicator
5 that corresponds to when the individual linked value is changed.

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7 **37. (original)** A state-based replication system as recited in claim 27,
8 wherein the individual linked values have an associated deletion indicator that is a
9 null identifier to indicate the existence of a linked value of the multi-valued
10 attribute.

11
12 **38. (original)** A state-based replication system as recited in claim 27,
13 wherein the individual linked values have an associated deletion indicator that
14 corresponds to when an individual linked value is marked for deletion from the
15 multi-valued attribute.

1 **39. (currently amended)** A computer-readable medium having
2 stored thereon a first data structure and a second data structure, comprising:

3 a first data field of the first data structure containing an attribute;

4 a second data field of the first data structure containing a value of the
5 attribute contained in the first data field, the value being a reference link to
6 multiple referenced linked values contained in the second data structure, the
7 referenced linked values having respective conflict-resolution information;

8 a first data field of the second data structure containing a version indicator
9 corresponding to a version of a referenced linked value contained in the second
10 data structure; and

11 a second data field of the second data structure containing an update
12 indicator corresponding to when the version indicator contained in the first data
13 field of the second data structure is changed.

14
15 **40. (previously presented)** A computer-readable medium as recited
16 in claim 39, wherein the second data structure further comprises a third data field
17 containing a creation indicator corresponding to when the linked value contained
18 in the second data structure is created.

1 **41. (previously presented)** A computer-readable medium as recited
2 in claim 39, wherein the second data structure further comprises a third data field
3 containing a deletion indicator corresponding to the linked value contained in the
4 second data structure and configured to indicate when the linked value is marked
5 for deletion from the second data structure.

6
7 **42. (currently amended)** A network system, comprising:
8 a first computer configured to replicate objects at an attribute level, and
9 further configured to maintain an object having a multi-valued attribute that
10 includes a value which is a reference link to multiple referenced linked values;

11 a second computer configured to replicate the objects at an attribute value
12 level, and further configured to maintain a second object having the multi-valued
13 attribute that includes the reference link to the multiple referenced linked values,
14 ~~each the~~ referenced linked values configured to have respective conflict-resolution
15 data;

16 the first computer further configured to:

17 replicate the second object from the second computer; and

18 resolve a replication conflict between the object and the second
19 object at the attribute value level with the conflict-resolution data
20 associated with a referenced linked value.

1 **43. (original)** A network system as recited in claim 42, wherein the
2 first computer first resolves the replication conflict between the object and the
3 second object at the attribute level, and second resolves the replication conflict
4 between the object and the second object at the attribute value level.

5
6 **44. (previously presented)** A network system as recited in claim 42,
7 wherein the first computer does not replicate a linked value from the second object
8 if the linked value does not have conflict-resolution data.

9 **45. (previously presented)** A network system as recited in claim 42,
10 wherein the first computer does not replicate a linked value from the second object
11 if the linked value has null conflict-resolution data.

12
13 **46. (previously presented)** A network system as recited in claim 42,
14 wherein the first computer resolves the replication conflict between the object and
15 the second object at the attribute value level in favor of a linked value that has
16 conflict-resolution data.

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18 **47. (previously presented)** A network system as recited in claim 42,
19 wherein the first computer resolves the replication conflict between the object and
20 the second object at the attribute value level in favor of a linked value that has
21 non-null conflict-resolution data.

1 **48. (previously presented)** A network system as recited in claim 42,
2 wherein the second computer is further configured to:

3 replicate the object from the first computer; and

4 resolve a replication conflict between the object and the second object at
5 the attribute value level with the conflict-resolution data associated with a linked
6 value.

7
8 **49. (original)** A network system as recited in claim 48, wherein the
9 second computer first resolves the replication conflict between the object and the
10 second object at the attribute level, and second resolves the replication conflict
11 between the object and the second object at the attribute value level.

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13 **50. (previously presented)** A network system as recited in claim 48,
14 wherein the second computer does not replicate a linked value from the object if
15 the linked value does not have conflict-resolution data.

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17 **51. (previously presented)** A network system as recited in claim 48,
18 wherein the second computer does not replicate a linked value from the object if
19 the linked value has null conflict-resolution data.
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1 **52. (previously presented)** A network system as recited in claim 48,
2 wherein the second computer resolves the replication conflict between the object
3 and the second object at the attribute value level in favor of a linked value that has
4 conflict-resolution data.

5
6 **53. (previously presented)** A network system as recited in claim 48,
7 wherein the second computer resolves the replication conflict between the object
8 and the second object at the attribute value level in favor of a linked value that has
9 non-null conflict-resolution data.

10
11 **54. (previously presented)** A network system as recited in claim 48,
12 wherein the second computer is further configured to delete a linked value from
13 the second object if the linked value does not have conflict resolution data, and if
14 the linked value is not replicated from the object.

15
16 **55. (currently amended)** A method, comprising:
17 replicating an object stored in a first directory with a replica object stored in
18 a second directory, the object and the replica object ~~each having an~~ a multi-valued
19 attribute that includes a value that is a reference to link to ~~comprised of multiple~~
20 linked values, the multiple linked values ~~each having~~ respective conflict-resolution
21 data associated therewith;

22 comparing an individual linked value of the attribute in the object with an
23 individual linked value of the attribute in the replica object to identify a replication
24 conflict; and
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1 resolving the replication conflict with the conflict-resolution data associated
2 with the individual linked values.

3
4 **56. (previously presented)** A method as recited in claim 55, wherein
5 the conflict-resolution data comprises a version number that corresponds to a
6 version of an individual linked value, and wherein said comparing comprises
7 determining if an individual linked value version number has been changed.

8
9 **57. (previously presented)** A method as recited in claim 55, wherein
10 the conflict-resolution data comprises a version number that corresponds to a
11 version of an individual linked value, said comparing comprises determining if an
12 individual linked value version number has been changed, and the method further
13 comprises updating the individual linked value of the attribute that has a lower
14 version number with the individual linked value of the attribute that has a higher
15 version number.

16
17 **58. (previously presented)** A method as recited in claim 55, wherein
18 the conflict-resolution data comprises an update timestamp that corresponds to
19 when an individual linked value is changed, and wherein said comparing
20 comprises determining if an individual linked value update timestamp has been
21 changed.

1 **59. (previously presented)** A method as recited in claim 55, wherein
2 the conflict-resolution data comprises an update timestamp that corresponds to
3 when an individual linked value is changed, said comparing comprises
4 determining if an individual linked value update timestamp has been changed, and
5 the method further comprises updating the individual linked value of the attribute
6 that has an earlier update timestamp with the individual linked value of the
7 attribute that has a later update timestamp.

8
9 **60. (previously presented)** A method as recited in claim 55, wherein
10 the conflict-resolution data comprises a creation timestamp that corresponds to
11 when an individual linked value is created, and wherein said comparing comprises
12 determining if a creation timestamp has been changed.

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14 **61. (previously presented)** A method as recited in claim 55, wherein
15 the conflict-resolution data comprises a creation timestamp that corresponds to
16 when an individual linked value is created, said comparing comprises determining
17 if a creation timestamp has been changed, and the method further comprises
18 updating the individual linked value of the attribute that has an earlier creation
19 timestamp with the individual linked value of the attribute that has a later creation
20 timestamp.

1 **62. (previously presented)** A method as recited in claim 55, wherein
2 the conflict-resolution data comprises a version number that corresponds to a
3 version of an individual linked value and an update timestamp that corresponds to
4 when the individual linked value is changed, and wherein said comparing
5 comprises determining if a an individual linked value version number has been
6 changed and if the individual linked value update timestamp has been changed.

7
8 **63. (previously presented)** A method as recited in claim 55, wherein
9 the conflict-resolution data comprises a version number that corresponds to a
10 version of an individual linked value and an update timestamp that corresponds to
11 when the individual linked value is changed, and the method further comprises
12 updating the individual linked value of the attribute that first has a lower version
13 number, and second has an earlier update timestamp.

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15 **64. (original)** A computer-readable medium comprising computer
16 executable instructions that, when executed, direct a computing system to perform
17 the method of claim 63.
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1 **65. (previously presented)** A method as recited in claim 55, wherein
2 the conflict-resolution data comprises a creation timestamp that corresponds to
3 when an individual linked value is created, a version number that corresponds to a
4 version of the individual linked value, and an update timestamp that corresponds
5 to when the individual linked value is changed, and wherein said comparing
6 comprises determining if a an individual linked value creation timestamp has been
7 changed, if the individual linked value version number has been changed, and if
8 the individual linked value update timestamp has been changed.

9
10 **66. (previously presented)** A method as recited in claim 55, wherein
11 the conflict-resolution data comprises a creation timestamp that corresponds to
12 when an individual linked value is created, a version number that corresponds to a
13 version of the individual linked value, and an update timestamp that corresponds
14 to when the individual linked value is changed, and the method further comprises
15 updating the individual linked value of the attribute that first has an earlier
16 creation timestamp, second has a lower version number, and third has an earlier
17 update timestamp.

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19 **67. (original)** A computer-readable medium comprising computer
20 executable instructions that, when executed, direct a computing system to perform
21 the method of claim 66.
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1 **68. (previously presented)** A method as recited in claim 55, wherein
2 the individual linked values have a deletion timestamp that is a null identifier to
3 indicate the existence of a linked value of the attribute.

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5 **69. (previously presented)** A method as recited in claim 55, wherein
6 the individual linked values have a deletion timestamp that corresponds to when
7 an individual linked value is marked for deletion from the attribute.

8
9 **70. (previously presented)** A method as recited in claim 55, wherein
10 the individual linked values have a deletion timestamp that corresponds to when
11 an individual linked value is marked for deletion from the attribute, and the
12 method further comprises deleting a linked value from the attribute if the linked
13 value has a deletion timestamp that indicates the linked value is marked for
14 deletion.

15
16 **71. (original)** A computer-readable medium comprising computer
17 executable instructions that, when executed, direct a computing system to perform
18 the method of claim 70.

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20 **72. (original)** A computer-readable medium comprising computer
21 executable instructions that, when executed, direct a computing system to perform
22 the method of claim 55.

1 **73. (currently amended)** A method for replicating at least one a
2 linked value of a plurality of linked values referenced by a value of a multi-valued
3 attribute contained in an object, the linked value having conflict-resolution
4 information associated therewith, and the object being replicated from in a replica
5 object having the multi-valued attribute and the value referencing the linked
6 values, the replica object including a plurality of replica linked values having
7 conflict-resolution information associated therewith the method comprising:

8 comparing the conflict-resolution information associated with the linked
9 value as referenced by the value in the object with the conflict-resolution
10 information associated with the linked value as referenced by the value in the
11 replica object;

12 identifying a replication conflict with the conflict-resolution information
13 associated with the linked values; and

14 resolving the replication conflict with the conflict-resolution information.

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16 **74. (original)** A method as recited in claim 73, wherein the
17 conflict-resolution information comprises a version number that corresponds to a
18 version of the linked value, and the method further comprising:

19 determining if the linked value version number has been changed; and

20 updating the linked value of the attribute that has a lower version number
21 with the linked value of the attribute that has a higher version number.

1 **75. (original)** A method as recited in claim 73, wherein the
2 conflict-resolution information comprises an update timestamp that corresponds to
3 when the linked value is changed, and the method further comprising:

4 determining if the linked value update timestamp has been changed; and
5 updating the linked value of the attribute that has an earlier update
6 timestamp with the linked value of the attribute that has a later update timestamp.

7 **76. (original)** A method as recited in claim 73, wherein the
8 conflict-resolution information comprises a creation timestamp that corresponds to
9 when the linked value is created, and the method further comprising:

10 determining if the linked value creation timestamp has been changed; and
11 updating the linked value of the attribute that has an earlier creation
12 timestamp with the linked value of the attribute that has a later creation timestamp.

13
14 **77. (original)** A method as recited in claim 73, wherein the
15 conflict-resolution information comprises a creation timestamp that corresponds to
16 when the linked value is created, a version number that corresponds to a version of
17 the linked value, and an update timestamp that corresponds to when the linked
18 value is changed.

1 **78. (original)** A method as recited in claim 73, wherein the
2 conflict-resolution information comprises a creation timestamp that corresponds to
3 when the linked value is created, a version number that corresponds to a version of
4 the linked value, and an update timestamp that corresponds to when the linked
5 value is changed, and the method further comprises updating the linked value of
6 the attribute if the linked value first has an earlier creation timestamp, second has a
7 lower version number, and third has an earlier update timestamp.

8
9 **79. (original)** A computer-readable medium comprising computer
10 executable instructions that, when executed, direct a computing system to perform
11 the method of claim 78.

12 **80. (original)** A computer-readable medium comprising computer
13 executable instructions that, when executed, direct a computing system to perform
14 the method of claim 73.
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1 **81. (currently amended)** A method, comprising:

2 replicating a first object with a second object, the first object having an
3 attribute that includes a value which is a reference link to multiple referenced
4 linked values, the second object having an attribute that includes a value which is
5 the reference link to the multiple referenced linked values, ~~each the referenced~~
6 linked values configured to have associated conflict-resolution data;

7 resolving first a replication conflict between the first object and the second
8 object at an attribute level; and

9 resolving second a replication conflict between the first object and the
10 second object at an attribute value level with the conflict-resolution data
11 associated with the multiple referenced linked values.

12
13 **82. (previously presented)** A method as recited in claim 81, further
14 comprising determining whether a linked value corresponding to the second object
15 has conflict-resolution data and said replicating the linked value if said
16 determining that the linked value has conflict-resolution data.

17
18 **83. (previously presented)** A method as recited in claim 81, further
19 comprising determining whether a linked value corresponding to the second object
20 has non-null conflict-resolution data and said replicating the linked value if said
21 determining that the linked value has non-null conflict-resolution data.

1 **84. (previously presented)** A method as recited in claim 81, said
2 resolving the replication conflict between the first object and the second object at
3 the attribute value level in favor of a linked value that has conflict-resolution data.

4
5 **85. (previously presented)** A method as recited in claim 81, further
6 comprising deleting a linked value corresponding to the second object if the linked
7 value does not have conflict-resolution data and if the linked value is not
8 replicated.

9
10 **86. (original)** A computer-readable medium comprising computer
11 executable instructions that, when executed, direct a computing system to perform
12 the method of claim 81.